

**WHAT IS CLAIMED:**

1. A method of displaying 3D data, comprising:

subdividing a 3D display region into two or more display subregions;

assigning a set of display rules to each display subregion;

5 displaying part or all of a 3D data set in each display subregion according to the rules assigned to that display subregion.

2. The method of claim 1, where the 3D data set displayed in each display subregion is the same, but the display rules are different.

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3. The method of claim 1, where the 3D data set displayed in each display subregion is unique to that display subregion.

4. The method of claim 3, where the 3D data sets displayed in each display subregion  
15 are 3D scans of a human or animal body or portion thereof using different sensing modalities.

5. The method of claim 4, where said sensing modalities comprise one or more of CT, MR, PET, SPECT and US.

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6. The method of claim 1, where the display subregions comprise volumes, 2D surfaces, and points.

7. The method of claim 1, where the 3D display region is a rectangular crop box.
8. The method of claim 7, where the display region is divided into two display  
5 subregions whose mutual boundary is a plane.
9. The method of claim 1, where a user can define one or more boundary planes that  
divide the  
display region into two or more display subregions.
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10. The method of claim 9, where the boundary planes are parallel to one or more  
surfaces of the display region.
11. The method of claim 1, where the boundaries of the display subregions and the  
15 set of display rules for each display subregion are defined by a user.
12. The method of claim 11, where the boundaries of the display subregions and the  
set of display rules for each display subregion are defined by system defaults which  
can be modified by a user.
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13. The method of claim 1, where the boundaries of the display subregions may be  
varied by a user during the display, such that points in a 3D data set now located in a

new display subregion are displayed according to the corresponding new display rules in substantially real time as the boundaries change.

14. The method of claim 13, where said variation of the boundaries of display  
5 subregions include one or more of translation, rotation, scaling, shear, linear warping or non-linear warping.

15. The method of claim 1, where all points in the display region associated with a  
given display subregion need not be contiguous.

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16. The method of claim 11, where a user defines or modifies said boundaries and/or  
display rules via an interactive object within the display.

17. The method of claim 12, where a user defines or modifies said boundaries and/or  
15 display rules via an interactive object within the display.

18. The method of claim 11, where a user defines or modifies said boundaries and/or  
display rules via a mouse, trackball, joystick or other spatial 2D input peripheral.

20 19. The method of claim 12, where a user defines or modifies said boundaries and/or  
display rules via a mouse, trackball, joystick or other spatial 2D input peripheral.

20. The method of claim 1, where the 3D data set displayed in each display subregion is stored as one of volume raster data or geometric constructs.

21. A computer program product comprising:

5 a computer usable medium having computer readable program code means embodied therein for displaying 3D data in a 3D data display system, the computer readable program code means in said computer program product comprising:

computer readable program code means for causing a computer to subdivide a 3D display region into two or more display subregions;

10 computer readable program code means for causing a computer to assign a set of display rules to each display subregion; and

computer readable program code means for causing a computer to display all or part of a 3D data set in each display subregion according to the rules assigned to that display subregion.

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22. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to implement a method of displaying 3D data, said method comprising:

20 subdividing a 3D display region into two or more display subregions;

assigning a set of display rules to each display subregion; and

displaying all or part of a 3D data set in each display subregion according to the rules assigned to that display subregion.

23. The method of claim 1, where one or more 3D data sets are displayed in each display subregion.

5     24. The method of claim 1, where the same 3D data set is displayed to each display subregion.

25. A method of displaying 3D data in a 3D display system, comprising:

loading one or more 3D data sets into a 3D display system;

10     subdividing a 3D display region into two or more display subregions;

assigning one or more 3D data sets to each display subregion;

assigning a set of display rules to each display subregion;

displaying visible portions of a 3D data set in each display subregion

according to the rules assigned to that display subregion.

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26. The method of claim 25, where one of the 3D data sets is displayed in each display subregion.

27. The method of claim 25, where only one 3D data set is displayed in each display

20     subregion.

28. The method of claim 3, where the 3D data sets displayed in each display region are surface renderings of polygonal data sets.